Lead in Drinking Water

Frequently Asked Questions

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Capital Regional District | **November 2019**

Recent media coverage of concerns about lead levels in drinking water in some Canadian communities has generated a number of Frequently Asked Questions:

What are the health concerns with lead in drinking water?

Children, infants and fetuses are most at risk from exposure to lead because of their developing brains. Lead exposure can affect neurological development and behaviour in children.

What is the maximum acceptable concentration of lead in drinking water?

In March 2019, Health Canada published a revised guideline for lead in drinking water, decreasing the maximum acceptable concentration of lead from 0.01 mg/L to 0.005 mg/L.

Is there lead in the drinking water in Greater Victoria?

Lead does not naturally occur in the source water for Greater Victoria, but it can leach out of pipes and fixtures into the water, primarily from private plumbing. The extent of leaching depends on the type and age of plumbing materials used, the corrosiveness of the water, and the length of time that the water is stagnant in the water.

The CRD regularly (every two months) collects samples the water at five strategic locations across the region where the water transitions from the supply to the distribution system and does a full suite of metals tests to monitor metal concentrations. As reported in the Greater Victoria Water Quality 2018 Annual Report, in all of the samples, the lead concentrations were below the new guideline. The CRD is in the process of completing sampling and testing for lead at over 170 sites throughout the municipal distribution systems, in locations where the water flows from the public/ municipal system to the private plumbing systems. The preliminary results will be publicly available before the end of 2019.

Currently, consumers' tap sampling is not a requirement of the operating permit for the Capital Regional District (CRD) Regional Water Supply System, or the municipal and CRD distribution system operating permits issued by Island Health and guided by the requirements of the BC Drinking Water Protection Act. The CRD has not conducted sampling at consumers' taps and therefore the CRD cannot say what the lead concentrations are in the water at the tap in private buildings. The potential effects of the private plumbing systems on lead concentrations are explained further below.

How does lead get into the drinking water if it is not found in any concentration in the source water?

If water sits or stagnates in private plumbing systems for extended periods (several hours), the water can leach or draw out metals including lead, from pipes and fixtures into the water. Lead containing pipe materials were not commonly used in the supply system in this region, but there are lead sources in some distribution system components and brass (containing varying lead content) plumbing fixtures and lead-containing solder (used until

1986) inside buildings. Lead property service lines (the pipe connecting the municipal water system to the private plumbing system) were not commonly used in the region as they were through the mid-1950's in other parts of Canada.

Further, the drinking water in Greater Victoria can be generally characterized as a low to moderate risk for corrosivity, with a current mean pH of 7.6 and mean alkalinity of 16.5 mg/L, which means the water is not aggressively leaching lead out of pipes and fixtures into the water.

What water testing does the Capital Regional District do on a regular basis?

The CRD continually monitors water quality parameters through online instruments in the water treatment plants. These parameters include turbidity and chlorine residual levels. In addition, the CRD completes daily water quality monitoring and testing required under the BC Drinking Water Protection Act and Regulation throughout the Regional Water Supply System serving Greater Victoria including bacteriological tests for E.coli and Total Coliforms. This extensive monitoring and testing program ensures that the water we deliver is safe for you and your family to consume.

At least every two months the water in the supply system is tested for several chemical and physical properties including lead, to ensure quality is within the Canadian Drinking Water Quality Guidelines (Health Canada). This data is available in the Water Quality Annual Reports which are available on the CRD website.

How is the CRD responding to this issue and the recent Health Canada guideline change for lead?

Beginning in August 2019, the CRD has undertaken a multi-phase, systematic approach to further study and analyze the potential exposure to lead from drinking water in this region. This approach recognizes the urgency and importance for more data, while ensuring scientifically defensible results are used to inform decisions regarding the removal of potential lead sources within the distribution infrastructure and whether centralized pH and/or alkalinity adjustment on the supply system should be considered.

- Phase 1 of the study is underway in partnership with the municipal distributors, and will assess in detail, the corrosiveness of water in all parts of the distribution systems across the region to identify areas of higher corrosion potential. In excess of 170 samples are being taken near the ends of the distribution systems, just before water enters private property and plumbing systems. The samples will be tested for lead, pH, and several other parameters. The preliminary results are anticipated before the end of this year and will be used to inform Phase 2 of the study.
- Phase 2 of the study in early 2020 will include additional sampling and may include sampling at consumers' taps based on the results from the Phase 1 sampling.
- Based on the results of Phases 1 & 2, in Phase 3, the CRD and the municipalities will identify where to focus resources on removing potential lead sources within the municipal infrastructure and the CRD will determine whether centralized pH and alkalinity adjustment on the supply system should be considered to assist in reducing the leaching potential in private plumbing systems.

The CRD continues to be diligent and proactive in ensuring that the best available science and knowledge is applied to protecting the public health. The Regional Water Supply Commission and the Public Water Advisory Committee support this approach.

Does the age of my home mean there's a greater likelihood of lead leaching into my drinking water?

Lead levels may be elevated in older homes (pre-1975), especially older homes with few renovations or upgrades that may still contain leaded pipes and plumbing fixtures. If you are uncertain as to whether or not lead exists in your pipes, the best practice is to "flush until cold" (or up to one minute) after water has been stagnant for a few hours or overnight. Flushing stagnant tap water reduces the potential for a building's plumbing to affect water quality.

What should I be looking for in my home to indicate that my pipes or plumbing fixtures may contain lead?

Lead is a soft, greyish-black metal that can sometimes be identified by easy indentation when scraped with a knife. The age of the fixture can also be an indicator of lead presence as it was commonly used prior to the 1990's. If you suspect a presence of lead fixtures in your home the best practice is to flush until cold.

Lead is typically found in jointing compounds, soldered joints and brass fixtures. Even though lead is not permitted in new pipes, solder and fixtures, it can be present up to 0.25% lead as a weighted average with respect to the wetted surface. These are still readily available for purchase at many retail outlets. When purchasing new fixtures, look for **lead-free certification** on the packaging.

Where can the public get more information about this issue?

The CRD is referring to the Health Canada public education information and has included the document Drinking Water: What about lead? on the CRD website. CRD water quality annual reports are published on the CRD website.

What can the public do to reduce the potential exposure to lead from their drinking water?

If you live in an older home that may have lead piping or plumbing fixtures containing lead, there are a few simple steps below that you can take to reduce potential exposure, particularly if there are pregnant women and young children in the home, and for anyone who wishes to be extra cautious:

- Flush your plumbing system - If water has been sitting in your pipes for several hours, run the tap until the water runs cold (about a minute) before drinking or cooking with any of the water from that tap. Only use cold water for drinking or cooking since hot water increases the leaching of lead from your plumbing.
- Clean your tap aerators or screens monthly to remove any particles that may contain lead.
- Replace any lead piping or older brass faucets and valves that may contain lead with new low/no lead content components.
- If you are pregnant and/or have a child under six, as a precaution, you can install an end-of-tap water filter. Use filters certified by the NSF for lead reduction and removal.
- If you are concerned and would like to test your water for lead, Island Health or the CRD can guide you to a laboratory that can test your water at your expense – the CRD cannot conduct the lead tests in the CRD lab. Contact the CRD lab at lab@crd.bc.ca.

Can I treat or test my water?

If you are concerned and would like to test your water for lead, Island Health or the CRD can guide you to a laboratory that can test your water at your expense – the CRD cannot conduct the lead tests in the CRD lab. Contact the CRD lab at lab@crd.bc.ca for information.

As a further precaution, you can install an end-of-tap water filter. Use filters certified by the NSF for lead reduction and removal and make sure the filter is changed regularly as per the manufacturers instructions.

"Flushing until cold" will, however, decrease the potential for a building's plumbing pipes to affect water quality.

Will "flushing until cold" waste water?

'Flushing until cold' can still be done in a way that will support water conservation efforts. Flushing until cold generally does not take more than a minute for most homes. "First flush" water can be collected and used for washing or to water plants and gardens. Flushing the toilet first thing in the morning will also help move water through the pipes, therefore reducing the time needed to flush the tap until cold.

For more information:

CRD Water Quality Information:

www.crd.bc.ca/service/drinking-water/drinking-water-quality

CRD Water Quality Annual Reports:

www.crd.bc.ca/about/document-library/documents/plans-reports/drinking-water

Government of Canada: Guidelines for Canadian Drinking Water Quality:

https://www.canada.ca/en/health-canada/services/environmental-workplace-health/water-quality/drinking-water/canadian-drinking-water-guidelines.html